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Vol. 2, No. 1.

August, 1932.

Agriculture.

Agriculture's challenge to the engineer. By Leonard J. Fletcher. Agricultural Engineering. v. 13, no. 7. July, 1932. p. 169-173. Improvement in efficiency of agricultural production is problem of every individual farmer and not of entire industry as unit.

Eyes of trade turn to southwest: acreage planting plans waver between market developments and desire to force world show-down on low production costs. Implement and Tractor Trade Journal. v. 47, no. 15. July 16, 1932. p.8-9.

Farming as a relief for unemployment. By Victor F. Hayden. California Cultivator. v. 78, no. 25. June 18, 1932. p. 547. Present is no time for wholesale movement of inexperienced city people into commercial agriculture.

Teamwork in an engineer's policy for agriculture. By James T. Jardine. Agricultural Engineering. v. 13, no. 7. July, 1932. p. 177-181.

U. S. Census, Bureau of Agriculture. 1930. 2v. v.1. Farm acreage and farm values. v.2, pt. 3. Reports by states.

Air conditioning.

Air conditioning. Domestic Engineering. v. 140, no.1. June, 1932. p.44-45.

Air conditioning. By William Hull Stangle and Realto E. Cherne. Heating and Ventilating. v. 29, no. 7. July, 1932. p. 44-47. pt. XX. Heat insulation and sound isolation.

Air conditioning and the humble hen egg. By Thos. H. Hart. Chapter 1 - Incubation. Aerologist. v. 8, no. 8. August, 1932. p. 5-7, 18, 25.

Air temperature. By E. V. Hill. Aerologist. v. 8, no. 8. August, 1932. p. 20-25. Thermometers and their use. Psychrometer.

Bibliography of A. S. H. V. E. papers and articles on air conditioning. Heating, Piping and Air Conditioning. v. 4, no. 5. May, 1932. p.385-386.

Charts show fundamentals of the drying process. By Malcolm Tomlinson. Heating, Piping and Air Conditioning. v. 3, no. 12. December, 1931. p. 1017-1020.

Opportunity - ice for air conditioning: Editorial. Electrical World. v. 100, no. 2. July 9, 1932. p. 42.

Air conditioning. (Cont'd)

- Physical and physiological aspects of air conditioning. By C. P. Yaglou. Heating, Piping and Air Conditioning. v. 4, no.1. January, 1932. p. 57-64.
- Power sales grow with iced comfort cooling. By Emerson A. Brandt. Electrical World. v. 100, no.2. July 9, 1932. p. 54-57. Ice for air conditioning promises to furnish large outlet for electric power.
- Research data and applications of ice to air conditioning. By B. S. Williams. Refrigerating World. v.67, no.7. July, 1932. p. 8-12, 61-64.
- Research in the field of air conditioning. By John Howatt. Aerologist. v. 8, no. 8. August, 1932. p. 8-9.
- What you should know about air conditioning. By Walter L. Fleisher. Domestic Engineering. v. 140, no. 2. July, 1932. p. 49-53. What is air conditioning? Meaning of relative humidity; Progress of cooling; Figuring of cooling load.

Building construction.

- Estimating building costs. By Frank E. Barnes. 3rd edition. N.Y., McGraw-Hill Book Company, Inc., 1931. 656p.
- Fireproof studs for houses are made of steel. Popular Mechanics. v. 57, no. 6. June, 1932. p. 959. Light skeleton - steel construction. Pipes and conduits can be run through studding at any point.
- Reinforced brickwork: New construction material. Engineering News Record. v. 109, no.3. July 21, 1932. p. 71-74. Recent applications of this novel brick-steel construction include variety of structures. Tests indicate high strength.

Concrete.

- Costs and prices of ready-mixed concrete. General Building Contractor. v.3, no.2. February, 1932. p. 11-15.
- Visualizing concrete economy in terms of strength. By Inge Lyse. Engineering News Record. v. 109, no. 4. July 28, 1932. p. 109-110. Straight-line relation between strength and cement-water ratio permits direct measure of cost in terms of strength. Cost per unit of strength decreases with increase in strength.

Conduits.

- Concrete water conduit tapped while in service. By Eugene A. Prokop. Engineering News Record. v. 108, no. 24. June 16, 1932. p. 858-859. Modified pneumatic caisson enables openings to be made in filtered-water conduit to connect it with new weir chamber.

Cotton.

- Cost of operating modern gin is shown by ginner. Cotton Ginners' Journal. v. 3, no. 9. June, 1932. p. 9-10.

Cotton. (Cont'd)

Cotton drying experiments. By Chas. A. Bennett. Manufacturers' Record. v. 101, no. 29. July 21, 1932. p. 16.

Cotton ginning investigations. By Chas. A. Bennett. International Cotton Bulletin. v. 10, no. 40. July, 1932. p. 506-514.

Effects on cotton of irregular distribution of fertilizers. By A. L. Mehring and G. A. Cumings. 1932. 559-570p. Reprint from Journal of Agricultural Research. v. 44, no. 7. April 1, 1932.

Insect enemies of the cotton plant. By J. W. Folsom. 1932. 28p. U.S. Department of Agriculture. Farmers' Bulletin no. 1688.

Prorating cotton production. By Tait Butler. Progressive Farmer. v. 47, no. 13. July, 1932. p. 3.

Dairy equipment.

Care and management of dairy cows. By T. E. Woodward, J. R. Dawson and F.W. Miller. 1932. 34p. U. S. Department of Agriculture. Farmers' bulletin no. 1470.

Dams.

Belt conveyors place concrete for Vermont dam in the Alps. By Bruno Widman. Engineering News Record. v. 109, no. 5. August, 4, 1932. p. 126-129. Using no-slump concrete, placing was accomplished by belt conveyors that delivered steady stream from mixers to form in thin layers that could be tamped without shovel distribution. Editorial. p. 141.

Concrete for Hoover dam. pt. III -- Lining of diversion tunnels. By W.R. Nelson. Reclamation Era. v. 23, no. 8. August, 1932. p. 142-144. Lining the invert; Side-wall sections; Pouring the concrete; Crown sections.

Model tests verify design of Madden dam spillway. Engineering News Record. v. 109, no. 2. July 14, 1932. p. 42-44. Extensive studies made in Colorado laboratory check design of sloped apron adopted to meet special conditions found at toe of dam.

Wanted: Data on dam uplift. Letter from Committee on Dams, American Society of Civil Engineers. Engineering News Record. v. 109, no. 4. July 28, 1932. p. 112-113.

Drainage.

Drainage: Summary for the United States, 1929 and 1930. Washington, 1932. 32 p. U. S. Bureau of the Census.

Efficient working of land drains. Journal of the Ministry of Agriculture. v. 39, no. 2. May, 1932. p. 102-104.

Mole drainage. By J. H. Blackaby. 1932. 21p. Institute for Research in Agricultural Engineering. University of Oxford. Technical notes on mechanized farming. no. 1.

Electric service, Rural.

Ditching and laying plant for underground cable. Engineering News Record. v. 109, no. 3. July 21, 1932. p. 74-76. Editorial, p. 86-87.

Machine constructs cable line from trench to backfill. By Morris A. Robbin. Engineering News Record. v. 109, no. 3. July 21, 1932. p. 76-77.
Trench excavator, backfilling conveyor and cable reel carriage operating in train construct underground electric transmission line in one operation. Editorial p. 86-87.

Rural substation developed to meet seven requirements. By George H. Landis. Electrical World. v. 100, no.1. July 2, 1932. p. 26-28.

Electricity on the farm.

Application of electricity to poultry farming. By M. M. Harvey. Rural Electrification and Electro-Farming. v. 8, no. 86. July, 1932. p. 42-45.

Application of hydro-electric power to farm work. Article no. 25. Adaptation of commercial mechanical refrigeration on the farm. Hydro-electric power commission of Ontario. Bulletin v. 19, no. 6. June, 1932. p. 175-177.

Easy ensilage cutting. By E. R. Meacham. Electricity on the Farm. v. 5, no. 7. July, 1932. p. 8-13. Table gives fan speeds for filling silos of various heights.

Electric current for plow makes soil-turning easy. Popular Mechanics. v. 57, no. 6. June, 1932. p. 906. Current applied directly to moldboard. Water film from soil on moldboard acts as lubricant, reducing friction and resulting in ten-per-cent saving on power necessary to pull implement.

Electricity - a good hired man is right on the job wherever light, power, heat or cold is needed. American Agriculturist. v. 129, no. 22. May 28, 1932. p. 1, 7-8.

Electricity sterilizes soil economically. Electrical World. v. 100, no.1. July 2, 1932. p.9. Idea being worked out embodies principle of using soil itself as resistance to circuit to develop heat required.

Farm electrification made great gain in 1931. Electrical World. v. 100, no.3. July 16, 1932. p.71. Gain of 90,800 reported in 1931. Statement of Mr. S. H. McCrory. 1,779,000,000 kw-hr. of electrical energy at cost of \$46,187,000 consumed in 1930.

Let the blower fill the mow. Hoard's Dairyman. v. 77, no. 10. May 25, 1932. p.268. Newer method doubles mow capacity, takes farmer out of mow, saves labor in haying and feeding, and produces quality roughage.

Ninth annual report to the Committee on the Relation of Electricity to Agriculture by the Director. 1932. 15p. multigraphed.

Ten gallon electric milk pasteurizer. By H. Elmer Besley. 1932. 3p. Mimeographed. National Rural Electric Project. Mimeo report no. 11.

2,300,000 village families still to be served. Electrical World. v. 100, no. 5. July 30, 1932. p. 150. Table gives by States urban and rural domestic customers. July 31, 1930.

Erosion control.

Miniature river helps study of erosion and floods. Popular Mechanics. v. 57, no. 6. June, 1932. p.907. Study of Connecticut river at M.I.T.

Soil drifting in Alberta. By F. A. Wyatt. Montana Farmer. v. 19, no. 21. July 1, 1932. p.3. Control measures: 1. Regulate time of plowing so that soil is moist when plowed. 2. Leave surface rough. 3. Control weeds on summerfallow. 4. At critical time keep surface soil rigid at right angles to prevailing wind. 5. Spread manure on spots most likely to start blowing. 6. Alternate strips of crop and fallow. 7. Plant more trees as wind breaks. 8. Irrigate as much land as possible.

Why is erosion attacking Palouse Hills? And how may the attack be repulsed successfully? By E. A. Bryan. Washington Farmer. v. 66, no. 26. June 30, 1932. p.2.

Extension.

Place of the agricultural engineer in agricultural extension work. By R. J. Baldwin. Agricultural Engineering. v. 13, no. 7. July, 1932. p.175-176.

Farm machinery and equipment.

Better tools reduce costs. By E. T. Leavitt. Farm Machinery and Equipment. no. 1782. June 15, 1932. p.5, 22. Modern equipment proves economical besides eliminating much of old-time drudgery of harvest time.

Cheap plowing. Prairie Farmer. v. 104, no. 11. May 28, 1932. p. 15. Diesel-motored caterpillar tractor recently completed job of plowing 6,880 acres in 46 days on ranch near Arlington, Oregon. Cost of fuel, oil, grease and repairs were 7.78 cents per acre. Tractor pulled 16 16-inch plows and turned acre of ground every half-mile. Outfit operated by two crews, was run 23 hours per day. Fuel cost in this test was only 5.73 cents per acre.

Chopped hay economical. Dakota Farmer. v. 52, no. 11. May 28, 1932. p. 267. 1. Less storage space required. 2. Put up in less time. 3. Readily mixed with other feeds. 4. Eliminates all feeding waste. 5. Much easier to get out of mow.

Cost-cutting tools: Recent improvements add longer life to farm machinery. New England Homestead. v. 105, no.1. July 9, 1932. p. 5, 9.

Efficient tools cut harvesting costs: Combine has made grain harvesting a "family affair". Farmer. v. 50, no. 12. June 11, 1932. p. 6, 13.

Gyrotiller. Australian Sugar Journal. v. 24, no. 3. June 2, 1932. p. 127-128. Tilling of soil is done by means of knives attached to two rotating discs.

Manufacture and sale of farm equipment and related products, 1931. 1932. 5p. Mimeographed. U. S. Bureau of the Census.

Motor carried on back runs hand cultivator. Popular Mechanics. v. 57, no. 5. May, 1932. p. 720. Motor develops one horsepower and can be used for driving variety of tools.

1931 farm equipment census. Farm Machinery and Equipment. no. 1782. June 15, 1932. p. 6.

Pick-up windrow baler advantages for custom work. Farm Implement News. v.53, no. 25. August 4, 1932. p. 16.

Plowing with moldboard plows. By Wallace Ashby and A. H. Glaves. 1932. 22p. U.S. Department of Agriculture. Farmers' bulletin no. 1690.

Rotary plow to aerate soil helps fertilize it. Popular Mechanics. v. 57, no.5. May, 1932. p. 811. In one operation, plow pulverizes soil, aerates it, assists in conserving its moisture and cuts up any surface growth into small pieces, distributing them evenly with soil to aid fertilization. Operated by small power tractor.

Rothamsted conference on power farming. Journal of the Ministry of Agriculture. v. 38, no. 12. March, 1932. p. 1200-1204.

Some problems of power farming. By H. J. Denham, S. J. Wright, J. E. Newman, 1932. 16p. Institute for Research in Agricultural Engineering. University of Oxford. Occasional notes on mechanized farming. no.2.

Subsoiling versus deep plowing. By L.M. Riggs. California Cultivator. v. 78, no. 25. June 18, 1932. p.555.

Types of motors and their application. By B. W. Faber. Farm Implement News. v. 53, no. 24. July 21, 1932. p. 16-18. Characteristics of single phase motors; Split phase motors; Repulsion - induction motors; Series motors; Capacitor motors; Characteristics of polyphase motors; Synchronous motors.

Fences.

Farm fencing. By J.B. Wilson and A. Carnes. 1932. 18p. Alabama Polytechnic Institute. Extension Service Circular no. 136.

Farms in need of better fence. Implement and Tractor Trade Journal. v. 47, no. 16. July 30, 1932. p. 10.

Fences find new favor. By Dahy B. Barnett. American Home. v. 8, no.2. May, 1932. p. 99-100, 106. Table gives cost of fences and their longevity.

"Put'er in low gear and push gate open". Dakota Farmer. v. 52, no. 11. May 28, 1932. p.267. Description of "push gates" successfully used in Texas.

Fertilizers.

Removal of sand-bed sludge and its sale for fertilizer. Engineering News Record. v. 109, no. 2. July 14, 1932. p. 41-42.

Truck garden crops show value of sewage sludge as fertilizer. By T.C. Schaetzle. Municipal Sanitation. v. 3, no.8. August, 1932. p. 324-327.

Filters and filtration.

Inexpensive pond water filter. Dakota Farmer. v. 52, no. 13. June 25, 1932. p. 322. Well dug at one end of pond. Metal culvert 14 feet in length and 3 feet in diameter for well curbing, pond and well connected by narrow horizontal trench filled with stone or broken brick to facilitate water seepage.

Floods and flood control.

Floods of two types in middle Rio Grande Valley. By R.G. Hosea. Engineering News Record. v. 109, no.4. July 28, 1932. p. 100-102. Streamflow studies show flood peaks dependent upon geographic position rather than area. Reservoirs have limited possibilities for flood control.

Great flood of the Yangtse River. By Ludwig Brandt. Engineering News Record. v. 109, no.5. August 4, 1932. p. 133-134. Range and height of inundation, with calculation of heights, assuming a retained river; and some recommendations for immediate palliative measures and ultimate remedy. Editorial p. 141.

State bid for district bonds will start flood control work. Engineering News Record. v. 109, no.2. July 14, 1932. p. 59. \$565,000 flood control project for American River near Sacramento, Calif.

Flow of water and gases.

Constant flow characteristic of the plane orifice in proximity to side walls. By Charles William Harris. 1931. 18p. Washington Engineering Experiment Station Bulletin no. 56.

Forage drying.

Drying of wheat. By E. Stansfield and W. H. Cook. 2d report. Ottawa, 1932. Canada. National Research Council. Report no. 25. 104p.

No "weather worries" when hay is machine dried! By L.J. Smith. Idaho Farmer. v. 49, no. 22. June 2, 1932. p.3.

What is good hay? How to produce it with a minimum of labor. American Agriculturist. v. 129, no. 24. June 11, 1932. p. 3, 6.

Frost protection.

Oil heating in orchards. Heating and Ventilating. v. 29, no. 7. July, 1932. p. 47.

Fuels.

Better distillate available for tractor fuel: Editorial. Farm Implement News. v. 53, no. 25. August 4, 1932. p. 12.

Comparative values of heat in coal, oil, and gas. By S. H. Viall. Chemical and Metallurgical Engineering. v. 39, no. 4. April, 1932. p. 234.

Heating.

Automatic heating - it adds a room to the house while subtracting from drudgery with the old hand-fired plant. Domestic Engineering. v. 140, no.1. June, 1932. p. 51-53.

Basic laws and data of heat transmission. By W. J. King. Mechanical Engineering. v. 54, no. 8. August, 1932. p. 560-565. pt. VI. Evaporation and condensation.

Chart for pressure drop in low-pressure steam piping. By Julius Hulman. Heating, Piping and Air Conditioning. v. 4, no.5. May, 1932. p. 343-345.

Heating. (Cont'd)

Heating in residences and small structures. By H. L. Alt. pt. XII. Domestic Engineering. v. 140, no.2. July, 1932. p. 93-101, 154.

Load building possibilities with electric heating devices. By J.S. Keenan. Hydro-electric Power Commission of Ontario. Bulletin. v. 19, no. 7. July, 1932. p. 230-241. Industrial heating; Domestic water heating; Water used; Heat losses; Furnace coils.

Ribbed tubes for increased heat transfer. By J.H.D. Blanke. Aerologist. v. 8, no.8. August, 1932. p. 11-13. Some designs of ribbed tubes that have been developed for use in furnaces, steam boilers, economizers, superheaters, and air preheaters, and may have possibilities in air conditioning field.

Structural materials for modern heat technology. By F. H. Norton. Chemical and Metallurgical Engineering. v. 39, no. 4. April, 1932. p. 226-228.

Thermal properties of building materials. By F. B. Rowley and A.B. Algren. Heating, Piping and Air Conditioning. v. 4, no.5. May, 1932. p.363-369. Clay tile walls; Concrete walls; Brick walls; Gypsum partition tile walls; Rubble walls; Surface effect on heat transmission.

Utilization of anthracite for domestic heating. By Allen J. Johnson. Heating, Piping and Air Conditioning. v. 3, no. 12. December, 1931. p. 1050-1054.

Hotbeds.

Effect of heat on the germination of grain. By W. H. Cashmore. Oxford. 1932. 8p. Institute for research in agricultural engineering. University of Oxford. Technical notes on mechanized farming. no.2.

Electric soil heating: 1932 studies. By Geo. W. Kable. and A.V. Krewatch. 1932. 20p. Mimeographed. National Rural Electric Project. Mimeo report no. 10.

Hotbeds heated by electric lamps. By Robert L. Zahour. Electric Journal. v. 29, no.8. August, 1932. p. 400-401. Table gives construction details and dimensions for electric lamp hotbed of size suitable for average garden. Safe temperatures for common vegetables also given.

Soil heating for roof farm speeds plant growth. Popular Mechanics. v. 57, no. 6. June, 1932. p. 886. Experiments carried on by General Electric Company's Research laboratory.

Houses.

Clay products home at a cost of 30¢ a cu. ft. Brick and Clay Record. v. 81, no.1. July, 1932. p. 29. Above price would include built-in kitchen equipment, tile bath, high grade plumbing and heating, hard wood finished floors. Products used are hollow tile, face brick and common brick especially designed for economic use.

Home improvement on Alabama farms. By L. R. Neel. Southern Agriculturist. v. 62, no. 6. June, 1932. p. 3.

Factors frequently overlooked in planning houses. By Arthur Bates Lincoln.
Pencil Points. v. 13, no. 7. July, 1932. p. 469-472.

Reducing housing costs with prefabricated building units. By Robert Tappan.
Architectural Forum. v. 56, no. 5. May, 1932. p. 521-525.

Small gardened home for a small sum: \$4,500 to \$6,000, according to careful estimates, will build it in most cities, towns, and suburbs. Better Homes and Gardens. v. 10, no. 9. May, 1932. p. 20-21.

Want better homes at lower costs: Plans are devised to assist farmers to building own homes without hiring expensive technical help. Oregon Farmer. v. 55, no. 2. July 14, 1932. p.3.

Insect control.

Fighting grasshoppers and web worms: Editorial. Western Farm Life. v.34, no. 12. June 15, 1932. p.4. In case of web worm, plowing furrow to trap them is recommended, turning soil toward field to be protected. It may be necessary to run plow twice in same furrow. Following plow, smooth log, large enough to fill trench, and weighted down, should be run thru furrow to crush all clods and reduce sides and bottom of furrow to dust. As soon as considerable number of worms are trapped, log should be run thru, small end first, to crush them.

Insulation.

Alfol system of heat insulation. By N. Minaur. Australasian Electrical Times. v. 11, no. 5. May 27, 1932. p. 126-127. Aluminum as insulating material.

Fiber insulating board. Commercial Standards Monthly. v. 9, no.1. July, 1932. p. 16. Standards adopted at general conference of manufacturers, distributors and users of product.

Heat insulation developed for every purpose. By B. Townshend and E. R. Williams. Chemical and Metallurgical Engineering. v. 39, no. 4. April, 1932. p. 219-222. Table gives physical and thermal properties of some heat insulating materials.

Heat insulation in cold storage construction. By Ezer Griffiths. Structural Engineer. v. 10, no.5. May, 1932. p. 202-212.

Method and charts for determining economical thickness of insulation. By Temple C. Patton. Heating, Piping, and Air Conditioning. v. 4, no.1. January, 1932. p. 6-11. Gives method of arriving at economical thickness of insulation for large number of conditions which are actually met. Method is independent of whatever heat loss may have been in effect previous to application of insulating material. Type cases taken up: 1. Case of one insulation material applied to flat surface, 2. Case of two insulation materials applied to flat surface, 3. One insulation material applied to piping.

Irrigation.

Administration report for the year 1930-31. Part II -- Irrigation. India Madras presidency. Public Works Department. 1932. 470p.

Irrigation. (Cont'd)

Egyptian government will build irrigation works on upper Nile. Engineering News Record. v. 109, no. 2. July 14, 1932. p.60. Gebel Aulia dam. Estimated to involve expenditure of \$11,000,000.

Frequent irrigations starting in June gave highest tonnage last year. Brick and Clay Record. v. 81, no. 1. July, 1932. p. 99-104. Table gives relation of yield to number of irrigations and date started first irrigation, 1931-32.

Measuring the salinity of irrigation waters and of soil solutions with the Wheatstone bridge. By Carl S. Scofield. 1932. 16p. U.S. Department of Agriculture. Circular no. 232.

Out-doors plumbing -- the greatest need for summer. Domestic Engineering. v. 140, no. 1. June, 1932. p. 58-59.

Parshall flumes of large size. By R. L. Parshall. 1932. 55p. Colorado Agricultural Experiment Station. Bulletin no. 386.

Practical information for beginners in irrigation. By Samuel Fortier. 1932. 36p. U.S. Department of Agriculture. Farmers' bulletin no. 864.

Seek to reduce waste of irrigation water. Idaho Farmer. v. 49, no. 19. May 12, 1932. p. 11. Under average irrigating conditions little more than half water delivered to farm is beneficially used. Water should be kept out of irrigation canals except during irrigating season. Light frequent irrigations that do not reach to depth of crop roots allow excessive amount of surface evaporation. More head ditches, even though they use up valuable land and labor in irrigating, generally are profitable. Adapting size of stream and length of run to type of soil are necessary for cutting down percolation losses.

Show value of irrigation: Five-year test completed in Willamette Valley. Oregon Farmer. v. 54, no. 26. June 30, 1932. p. 7.

Sub-irrigation on the Plains. Farm and Ranch. v. 51, no. 12. June 15, 1932. p. 6. Requires only about 20 per cent of water necessary in surface application. Tank hauled by tractor. Attached to tank is hose which runs directly behind and under plow. Amount of water flowing through hose is regulated by valve. Plowing between rows, water runs into furrow and is covered, thus preventing evaporation.

Twenty-five years of supplemental irrigation investigation in Willamette Valley. By W. L. Powers. 1932. 30p. Oregon. Agricultural Experiment Station. Bulletin 302.

Land.

Classifying irrigable lands. By William De Young. Montana Farmer. v. 19, no. 20. June 15, 1932. p. 5. Soils, topography and drainage, primary factors to be considered.

Crazy quilt farms. By George R. Boyd. Successful Farming. v. 30, no. 8. August, 1932. p. 13, 28. Present time offers some very good opportunities for constructive reorganization.

Miscellaneous.

- Bethlehem sections. Bethlehem, Pa., Bethlehem Steel Company, 1931. 313p. Useful information comprising tables of dimensions, weights, properties, safe loads together with explanatory notes.
- Carnegie shape book: Profiles, tables, and data for rolled products, shapes, plates, bars and rails. Pittsburgh, Pa., Carnegie Steel Company, 1929. 371p.
- Carnegie steel sheet piling. Pittsburgh, Pa., Carnegie Steel Company, 1931. 92p. Tables and data bearing directly on steel sheet piling. Information on earth and water pressures which will be useful in determining resultant loads which piling must withstand.
- District of Columbia carries on campaign for mosquito eradication. By J.L. Robertson. Municipal Sanitation. v. 3, no. 8. August, 1932. p.328-332.
- Engineers, managers, and engineering education. By William E. Wickenden and Elliott Dunlap Smith. Mechanical Engineering. v. 54, no. 8. August, 1932. p. 541-542. Discussion of educational problems by recent occupational surveys.
- Design of equipment and method for preparing starter for Oregon creameries and cheese factories. By F. E. Price, and others. 1932. 28p. Oregon Agricultural Experiment Station. Bulletin 301.
- Five-lens camera to map state in one day. Popular Mechanics. v. 57, no. 5. May, 1932. p. 714. At altitudes of 25,000 feet each camera covers area of about 350 square miles.
- Forty-fourth annual report, 1931. 1932. 192p. Texas. Agricultural Experiment Station. Agricultural Engineering, p. 96-98.
- Handbook of tables and information appertaining to the use of alloy cast iron, structural steel*** for engineers - architects - builders. St. Paul, Minn. St. Paul Foundry Company, 1932. 366p. Contains data, details, and tables for the design of steel structures.
- Pavements around the house. By Eugene Clute. Country Life. v. 62, no. 1. May, 1932. p. 35-37, 76.
- Planning for prosperity. By George H. Shepard. Mechanical Engineering. v. 54, no. 8. August, 1932. p. 539-540.
- Pocket companion, abridged edition. Information and tables for engineers and designers and other data pertaining to structural steel. Pittsburgh, Pa., Carnegie Steel Company, 1931. 320p.
- Practical problems in mathematics: How to figure discounts. Domestic Engineering. v. 140, no. 2. July, 1932. p. 61.
- Research and education in the National Parks. By Harold C. Bryant and Wallace W. Atwood, Jr. 1932. 66p. U.S. National Park Service.
- Society and College: Advance of the engineering profession a joint responsibility. By William E. Wickenden. Refrigerating Engineering. v. 24, no. 1. July, 1932. p. 9-11, 58.

Superheat engineering data! Handbook on the generation and use of superheated steam and related subjects. 7th edition revised. N.Y., Superheater Company. 1932. 253 p.

Twenty-fourth annual report of the Hydro-Electric Power Commission of the Province of Ontario for the year ended October 31st, 1931. Toronto, 1932. 503p.

Western engineering problems discussed by civil engineers. Engineering News Record. v. 109, no.2. July 14, 1932. p. 50-53. Parks and streamflow; Columbia River development; Dams and uplift. Editorial p. 56-57.

Motors.

Belted motor drives. By Robert W. Drake. Power Plant Engineering. v. 36, no.14 July 15, 1932. p. 567-570. Paper pulleys; Wider belts; Higher belt speed; Roller bearings; Pivoted motor base and gravity idler.

Painting.

Why are barns painted red? Hand brushing versus spraying and other observations about painting. American Agriculturist. v. 129, no. 23. June 4, 1932. p. 3, 14.

Pipes.

Handbook of cast iron pipe for water, gas, steam, air, chemicals and abrasives. Chicago, Ill., Cast Iron Pipe Research Association, 1927. 336p.

Loads on pipe in wide ditches. By W. J. Schlick. 1932. 48p. Iowa Engineering Experiment Station. Bulletin no.108.

Methods of reducing friction heads in pipe fittings. By Joseph LeGrand. Heating, Piping and Air Conditioning. v. 4, no. 5. May, 1932. p. 378-381.

Poultry houses.

O.S.C. 400-hen laying house. By A.G. Lunn and W.J. Gilmore. Oregon Agricultural College. Extension Service. Extension Bulletin no. 447.

Poultry keeping in back yards. By M. A. Jull and A.R. Lee. 1932. 30p. U.S. Department of Agriculture. Farmers' Bulletin no. 1508.

Power.

Cut down costs of power on the farm. Oregon Farmer. v. 54, no. 24. June 16, 1932. p. 15. Keeping of tractors or horses means overhead costs for interest, shelter, and other items of expense regardless of hours they are used. On typical Illinois farms in 1930 there was little difference, as an average, in cost per crop acre for labor, power and machinery when farms were operated with horses only and when operated with horses and two or three plow tractor.

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Power. (Cont'd)

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Hydroelectric development in Canada. By T. H. Hogg. Mechanical Engineering. v. 54, no. 8. August, 1932. p. 547-552. Discussion of present status of hydroelectric power development, attitude toward governmental supervision and control and describe briefly some of outstanding features of recent large developments.

Minnesota farm power analyzed: University survey shows tractors providing almost as much as animals and furnishing more than million drawbar hp. Implement and Tractor Trade Journal. v. 47, no. 15. July 16, 1932. p. 11. Table gives forms of power used on Minnesota farms.

Power for farm and fireside: Editorial. Power Plant Engineering. v. 36, no. 14. July 15, 1932. p. 550.

Power requirement for a small compressor. By Henry F. Irving. Refrigerating Engineering. v. 24, no. 1. July, 1932. p. 12-16, 19. Based on dynamometer measurements and weighing of circulated ammonia.

Some problems of horse revival. Wisconsin Agriculturist. v. 59, no. 15. July 23, 1932. p. 3, 6. What is needed now is to work out suitable combinations of horse and motor power rather than to eliminate latter entirely.

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Eagle pass hydroelectric development. By L. F. Harza and J. S. Bowman. Power Plant Engineering. v. 36, no. 15. August 1, 1932. p. 582-586. Three 4000-k-wa. units operate in conjunction with irrigation system. Penstock, spillway, turbine and plant interior have noteworthy features.

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\$1,400,000,000 of public works wait better financing. Engineering News Record. v. 109, no. 5. August 4, 1932. p. 145. Gives summary of list of projects by states.

Relief bill is enacted: Editorial. Engineering News Record. v. 109, no. 3. July 21, 1932. p. 87.

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Consumption of electricity. Farm Machinery and Equipment. no. 1783. July 15, 1932. p. 7. Gives current consumed by motor driven pumping equipment.

Cost for power in pumping vs. pump and motor efficiency. By Geo. B. Massey.
Water Works and Sewerage. v. 79, no. 7. July, 1932. p. 257-258.

Cost of pumping for irrigation in Colorado, with data. By W. E. Code. 1932.
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Colorado river basin investigations. Reclamation Era. v. 23, no. 7. July,
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Don't drain your swamp cultivate it! By George Hobden Corsan, Sr. Outdoor
America. v. 10, no. 8. March, 1932. p. 14-15, 36-37, 48.

Under-water mower clears lake of reeds. Popular Mechanics. v. 57, no. 5.
May, 1932. p. 817. Operated from flat boat. Boat propelled by automobile
engine by means of two paddle wheels. Single-cylinder stationary engine in-
stalled which drives mower blades.

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Commercial refrigerants and their properties. By Wallace H. Martin. Power
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dioxide, methyl chlorido, hydrocarbons, silica gel, other chlorides.

Cool storage of fruit. Refrigeration, Cold Storage, Air Conditioning.
v. 3, no. 1. April 30, 1932. p. 13-17. Refrigeration requirements;
Heat leakage through chamber insulation; Chilling of fruit from atmospheric
to storage temperature; Heat generated by respiration of fruit; Heat gener-
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Heat of air exchange and ventilation; Frictional heat of air and brine cir-
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Determination of refrigerating capacity. Pt. II. By A. Alison. Ice and
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dioxide.

"Dry ice" box for vegetables. New development in transportation of perishables
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Methyl chloride. By J. B. Churchill. Industrial and Engineering Chemistry.
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Pre-cooling fruits and vegetables with circulating air. By Clarence E. Baker.
Heating, Piping and Air Conditioning. v. 4, no. 1. January, 1932.
p. 42-44. Value of pre-cooling and reasons for doing so are discussed in
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large extent on correct circulation of air.

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By W. R. Woolrich. Southern Power Journal. v. 50, no. 8. August, 1932.
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Tests of an ice refrigerated cooling unit under controlled conditions. By R. L. Perry. Journal of Dairy Science. v. 15, no. 3. May, 1932. p. 190-198.

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Forecasting snow runoff of Humboldt river, Nevada. Engineering News Record. v. 109, no. 5. August 4, 1932. p. 135-136.

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Five-mile seawall built on precast piles. By H. A. Christie. Engineering News Record. v. 109, no. 2. July 14, 1932. p. 33-36. Stepped slab of reinforced concrete, carried on cutoff wall of concrete sheetpiling and two rows of piles, protects New Orleans against Lake Pontchartrain floods. Construction from land side behind wall of steel sheeting.

Sewage and sewage disposal.

Sewage disposal. By George L. Robinson. pt. I. Architectural Record. v. 72, no. 1. July, 1932. p. 32-38.

Silos.

Trench silo is satisfactory. Farm and Ranch. v. 51, no. 12. June 15, 1932. p. 4.

Soils.

Critical laboratory review of methods of determining organic matter and carbonates in soil. By Lyle T. Alexander and Horace G. Byers. 1932. 26p. U. S. Department of Agriculture. Technical bulletin no. 317.

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Soils. (Cont'd)

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British standardize nozzles for measuring air-flow. Automotive Industries. v. 67, no. 3. July 16, 1932. p. 78. Standardization work in England results in recommendation of design and specifications for use in engine testing.

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Measurement of surface temperatures. By Neil P. Bailey. Mechanical Engineering. v. 54, no. 8. August, 1932. p. 553-556. Accuracies obtainable with thermocouples.

Measuring the temperature rise of cooling water. By D. Park Wooley. Power Plant Engineering. v. 36, no. 14. July 15, 1932. p. 560-563. Details of equipment used at Long Beach Station to give reliable readings within 0.1 deg. F. Thermocouples and multipoint recorders give complete satisfaction if properly installed. Data used for calculating pump capacities and for indicating condenser fouling.

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Efficiency of terracing machines. By J. C. Wooley. Agricultural Engineering. v. 13, no. 7. July, 1932. p. 182-183.

Level terraces are efficient. By John M. Rotan. Farm and Ranch. v. 51, no. 12. June 15, 1932. p. 13.

Terraces close the bunghole. By H. H. Bennett. Farm and Ranch. v. 51, no. 13. July 1, 1932. p. 15. Soil erosion is most serious continuing farm problem in U. S. 75 per cent of all cultivated land as nation is subject in some degree to its depredations. Erosion speeds up as upper layers are removed and soil becomes more and more unproductive and less retentive of moisture. Soil wastage by rainwater exceeds by 20 times rate at which soil is depleted by crops.

Tires.

Ground-contact area of tires varies directly with deflection. By P.M. Heldt. Automotive Industries. v. 67, no. 4. July 23, 1932. p. 100-103, 128. Load carried increases with deflection and inflation pressure, and is further added to by stiffness of tire wall structure.

Tractors.

Garden tractors on general farms: Their greater use assures the permanency of present movement toward making the farm supply more of what the family needs. Implement and Tractor Trade Journal. v. 47, no. 16. July 30, 1932. p. 11, 15.

I. H. C. announces Trac Trac Tor 40. Implement and Tractor Trade Journal. v. 47, no. 16. July 30, 1932. p. 16. Drawbar hp. of 40, and engine hp. of 52.

Walls.

Exterior wall construction. By L. B. Lent. General Building Contractor. v. 3, no. 2. February, 1932. p. 35-41. Construction features; Wall design; Walls of residential buildings; Outer facings; Wall costs; Factors governing selection of wall structure.

Metal strips in brick wall make it waterproof. Popular Mechanics. v. 57, no. 5. May, 1932. p. 817. V-shaped groove molded along center line of longitudinal surfaces of each brick as well as in corresponding position at ends. Into this groove goes L-shaped metal strip of non-corrosive alloy. Hook of L fits into vertical groove of brick. As bricks are laid, grooves of successive layers meet, so that metal strips which overlap from one brick to another form continuous mesh.

Steel-unit wall partitions make house economical. Popular Mechanics. v. 57, no. 5. May, 1932. p. 743. Two channel pieces are used for single stud, to which galvanized wires are welded by electricity. These wires, extending slightly more than one inch beyond face of channels, are used as attachment prongs in lathing. Lath, composed of wire mesh and heavy paper backing, is pushed against wire prongs which puncture paper. Then they are bent over reinforcing mesh of lath holding it firmly.

Watch wall temperatures in controlling oil burners. By Earl Brown. Domestic Engineering. v. 140, no. 1. June, 1932. p. 111-113, 127-130.

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Substandard electric water heaters. Hydro-electric power commission of Ontario. Bulletin v. 19, no. 6. June, 1932. p. 177-180.

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Ample water supply boosts land demand. Idaho Farmer. v. 49, no. 19. May 12, 1932. p. 6. Last snow report for Sawtooth watershed in Central Idaho showed much greater water supply for irrigation projects and one of heaviest snow years on record.

Water supply. (Cont'd)

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Wells and the part they play in our water supply. By W. R. McGrew. Water Works and Sewerage. v. 79, no. 7. July, 1932. p. 259-260.

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Metallization of wood opens new uses. By M. Naphtali. Chemical and Metallurgical Engineering. v. 39, no. 5. May, 1932. p. 269.